

**I claim as my invention:**

1. A photographer's assistant system where said system includes a head-worn display means where said display means is responsive to the output of a camera fixed in the immediate vicinity of the wearer of said display means, and where said system further includes a scene aremac, where said scene aremac is fixed in the immediate vicinity of the wearer of said display means.
2. A photographer's assistant system as described in Claim 1 where said camera and said scene aremac share a common effective center of projection.
3. A photographer's assistant system as described in Claim 1 where said scene aremac is responsive to a remote entity.
4. A photographer's assistant system as described in Claim 1 where said scene aremac is responsive to a telepointer operated by an individual at a remote location.
5. A director's assistant system where said director's assistant system includes communication means with a studio where said studio contains a camera and a scene aremac, where the director of said director's assistant system has means for projection of the output of said camera onto a screen, and means for scanning said projection upon said screen together with a blob of light from a laser pointer when said blob of light is incident upon said screen.
6. A director's assistant system as described in Claim 5 where said director's assistant system further includes means for determining the coordinates of said blob of light upon said screen.
7. A director's assistant system as described in Claim 6 where said director's assistant system further includes means for driving said scene aremac where said means for driving said scene aremac is responsive to said coordinates.

8. A director's assistant system as described in Claim 7 where said director may point with a laser pointer at objects on the screen, and where said director's assistant system includes means for scene aremac tracking where said means for scene aremac tracking includes means for matching approximately the location of the blob of light made by said aremac on the scene in front of said camera with the blob of light made by said red laser pointer, where said matching is in the image coordinates of said camera.
9. A director's assistant system as described in Claim 8 where said laser pointer is a red laser pointer, and where said aremac includes a red laser with galvos controlling the position of the beam of said red laser.
10. A director's assistant system as described in Claim 8 where said laser pointer is an infrared laser pointer, and where said aremac includes a red laser with galvos controlling the position of the beam of said red laser.
11. A telepointer aremac control system where said system includes a screenspace, a workspace, and means of communication between said screenspace and said workspace, where said workspace includes a camera and an aremac, and where said screenspace includes a screen and scanner of said screen where said screen may display the output of said camera, and where said scanner may scan said screen to determine the location upon said screen where a laser pointer is pointing, and where said telepointer aremac control system also includes means of controlling said aremac where said means of controlling said aremac includes means of aiming said aremac at a point in the scene before said camera where said means of aiming said aremac includes means of matching said point in said scene with the corresponding point on said screen selected by the pointing of a laser pointer at said screen.
12. A laser-based aremac system tele-operated by a laser pointer to facilitate communication between a first conferee using the laser pointer and a second con-

feree, at a remote location, working on objects in front of the laser-based aremac system, the laser-based aremac system comprising:

- a housing to be located in the workspace of said first conferee;
- camera enclosed in said housing;
- image capture means for said camera;
- laser-based aremac enclosed in said housing;
- communications channel between said first conferee and said second conferee, said communications channel including means of display of an image from said image capture means upon a screen in view of said first conferee;
- means of scanning said screen to detect the presence of a laser pointer aimed at said screen, and in the presence of a laser pointer aimed at said screen, to determine the coordinates where on said screen said laser pointer is pointing;
- means of pointing said laser-based aremac at a location in said workspace corresponding to the location on said image where said second conversee is pointing.

13. A laser-based aremac system as described in Claim 12 further including a beam-splitter where said beamsplitter combines said camera and said laser-based aremac to share a common center of projection.
14. A laser-based aremac system as described in Claim 13 where said beamsplitter transmits only a narrow band of wavelengths in which said laser-based aremac operates, and where said beamsplitter reflects all other wavelengths.
15. A laser-based aremac system as described in Claim 13 where said beamsplitter reflects only a narrow band of wavelengths in which said laser-based aremac operates, and where said beamsplitter transmits all other wavelengths.

16. An EyeTap aremac where said EyeTap aremac includes a point source of light, a spatial light modulator, and optics where said optics form an image of said point source of light in the lens of an eye of the user of said EyeTap aremac, and where said spatial light modulator is responsive to a video input signal.
17. An EyeTap aremac as described in Claim 16 where said EyeTap aremac is wearable.
18. An EyeTap aremac as described in Claim 17 where said EyeTap aremac is responsive to a signal from a remote director.
19. An EyeTap aremac as described in Claim 16 further including means of positioning said EyeTap with respect to said eye to prevent higher diffractive orders from entering said eye.
20. An EyeTap aremac as described in Claim 16 further including means of preventing all higher diffractive orders from entering said eye, other than the central brightest zeroth order.
21. An EyeTap aremac as described in Claim 17 further including a camera.
22. An EyeTap aremac as described in Claim 21 where said EyeTap aremac is responsive to a signal from a remote director, where said remote director may view a display medium responsive to said camera.
23. An EyeTap aremac as described in Claim 17 further including camera EyeTapping means.
24. An EyeTap aremac as described in Claim 17 further including camera EyeTapping means where said EyeTap aremac displays a signal indicative of the spatial variation in exposure across the image of the camera providing said camera EyeTapping means.

25. An EyeTap aremac as described in Claim 17 where said EyeTap aremac is head-mountable.
26. An EyeTap aremac as described in Claim 17 where said EyeTap aremac is built into eyeglasses.
27. An EyeTap aremac as described in Claim 26 where said optics is built into a lens of a pair of said eyeglasses.
28. An EyeTap aremac as described in Claim 27 where said optics includes a diverter.
29. An EyeTap aremac as described in Claim 28 where said diverter is a dichroic beamsplitter.
30. An EyeTap aremac as described in Claim 17 further including a camera and two-sided mirror where said camera is aligned with optical axis collinear to an optical axis defined by said point source and the center of said spatial light modulator and where said two-sided mirror forms an angle with said optical axis where said angle is not equal to an integer multiple of  $\pi/2$  and where said image is formed by reflection from one side of said two-sided mirror, and where said camera receives a picture by way of reflection from the other side of said two-sided mirror.
31. An EyeTap aremac as described in Claim 17 further including a camera and beamsplitter where said camera is aligned with optical axis collinear to an optical axis defined by said point source and the center of said spatial light modulator and where said beamsplitter forms an angle with said optical axis where said angle is not equal to an integer multiple of  $\pi/2$  and where said image is formed by reflection from one side of said beamsplitter, and where said camera receives a picture by way of reflection from the other side of said beamsplit-

ter, and where said EyeTap aremac further includes video feedback prevention means.

32. An EyeTap aremac as described in Claim 16 where said point source of light is a light emitting diode.
33. An EyeTap aremac as described in Claim 32 where said light emitting diode is a resonant light emitting diode.
34. An EyeTap aremac as described in Claim 32 where said light emitting diode is a laser diode.
35. An EyeTap aremac as described in Claim 32 where said light emitting diode is a laser diode and where said spatial light modulator is an LCD panel, and where said LCD panel is oriented so that the polarization orientation of the side facing said light emitting diode matches the polarization of said light emitting diode.
36. An EyeTap aremac as described in Claim 35 where said spatial light modulator is not square but has rectangular shape and where said laser diode is oriented with major axis of light output aligned along the length of said rectangular shape and where said laser diode is oriented with minor axis of light output along the width of said rectangular shape.
37. An EyeTap aremac as described in Claim 36 further including a dichroic beam-splitter as described in Claim 29.
38. A wearable camera system including camera and body-worn recording means, where said wearable camera system further includes camera EyeTapping means.
39. A wearable camera system as described in Claim 38 further including an aremac and aremac EyeTapping means.

40. A wearable camera system as described in Claim 39 where said aremac is responsive to at least one individual at a remote location, and where said at least one individual has image display means where said image display means is responsive to an output from said camera.
41. A wearable camera system as described in Claim 38 where said camera EyeTapping means includes a diverter.
42. A wearable camera system as described in Claim 38 where said wearable camera system includes EyeTapping means.
43. A wearable camera system including camera, spatial light modulator, and diverter, where said wearable camera system includes camera EyeTapping means.
44. A wearable camera system as described in Claim 43 where said spatial light modulator is responsive to a video signal derived from said camera.
45. A wearable camera system as described in Claim 43 where said spatial light modulator is responsive to a video signal derived from a director at a remote location, and where said director has means of display responsive to an output of said camera.
46. A wearable camera system as described in Claim 43 where said spatial light modulator is responsive to a video signal from a remote entity, where said remote entity is responsive to a video signal derived from said camera.
47. A wearable camera system as described in Claim 46 where said remote entity is an intelligence collective.
48. A wearable camera system as described in Claim 46 where said remote entity includes a person operating a telepointer where said telepointer includes the display of said video signal.

49. A wearable videoconferencing system to facilitate communication between a first conferee wearing a camera and at least one other conferee at a remote location using a laser pointer as a communications aid, said wearable videoconferencing system comprising:

- a laser-based aremac wearable by said first conferee;
- a projector used by said at least one other conferee, said projector displaying an image from said camera, said image displayed upon a screen visible to said at least one other conferee;
- scanning means to detect the use of a laser pointer on said screen, said scanning means including means of determining the location on said screen being pointed to;
- data communications means between said scanning means and said aremac, such that said at least one other conferee can point to objects which said first conferee can see by way of said aremac.

A wearable videoconferencing system as described in Claim 49 where said laser-based aremac is a scene aremac.

A wearable videoconferencing system as described in Claim 49 where said laser-based aremac is an aremac EyeTapping means.

A wearable videoconferencing system as described in Claim 49 further including an intelligence collective.

50. Telepointing means, where said telepointing means includes a camera, a motion stabilizer, an aremac, and a motion restorer.